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| 07/963,056 | 10/10/90 | APPELDOORN | 4795-1511A |

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| EXAMINER |
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ESM1/0915
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| ART UNIT | PAPER NUMBER |
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2501

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DATE MAILED:

09/15/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on Aug. 1, 1994 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(C) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-23 are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☒ Claims 1-18 are allowed.

4. ☒ Claims 19-20 are rejected.

5. ☒ Claims 21-23 are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

Applicant's communication, filed August 1, 1994, has been carefully considered by the Examiner. The rejections which were applied in the previous Office action and the teachings of the references have been closely studied in view of the amendments to the claims, the remarks accompanying the amendments, and the personal interview held on July 22, 1994. It is, accordingly, the conclusion of the Examiner that most of the pending claims do indeed patentably distinguish over the prior art of record. The allowable claims are specifically directed to **an illumination optical fiber** wherein the plurality of reflecting surfaces are arranged so as to provide uniform illumination along the optical fiber. This is achieved by having the reflecting surfaces vary in cross-sectional area and/or spacing along the fiber. The Examiner is convinced that the person of ordinary skill in the art would not have looked to the teachings of the Aoyama et al reference (which is directed to optical communication) when considering optical illumination devices. The Examiner is further convinced that there is nothing that would have motivated the person of ordinary skill in the art to combine the teachings of Mori with those of Aoyama et al, particularly since Mori is **not** concerned with communication. The rejections made of record in the previous Office action are therefore withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-18 are allowable over the prior art of record. The reasons are clearly stated above.

Claims 19 and 20 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent 4,234,907 to Daniel. These claims do not include the limitations (discussed above) which patentably define over the prior art. Daniel was submitted by applicant as part of the Information Disclosure Statement filed January 21, 1993. Daniel describes an array of illuminating optical fibers, as claimed by applicant, wherein each of the fibers has a plurality of reflecting surfaces of optical quality extending therein (shown in detail in Figure 10). A portion of the light propagating along each fiber in the array and impinging on the reflecting surfaces will be reflected out of the fiber. The patent does not specifically state that the light will be reflected out of the fiber by total internal reflection, but the person of ordinary skill in the art would understand this to be the case. The lower index of refraction of the air filling the cut out portion (Figure 10 of Daniel) will cause the light to be reflected downwardly, through the remaining thickness of the fiber, and out of the fiber in the exact same manner as shown by applicant in FIGURE 1 of the present application. Since Daniel does not require that there be precise spacing between the reflecting surfaces along each optical fiber, it is inherent that there will be some degree of variation in the spacing.

Applicant's claim 20 limitation would thus have been obvious to the person of ordinary skill in the art.

Claims 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These claims recite the patentable limitations discussed above.

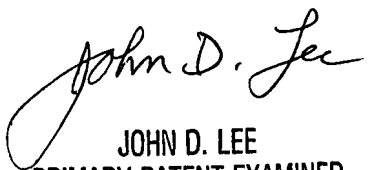
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The newly cited patent to Myers shows a similar illuminating array of optical fibers wherein light exiting areas are cut into each fiber by means of a laser.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication should be directed to Examiner John D. Lee at telephone number (703) 308-4886.

Serial No. 07/963,056
Art Unit 2501

4 
JOHN D. LEE
PRIMARY PATENT EXAMINER
GROUP ART UNIT 251